REMARKS

This responds to the Office Action dated January 9, 2008.

Claims 23, 26, 30, 32, 34, 38, and 40 are currently amended, claims 2-3, 11, 16, 17, 24, 25, 31, 35, 36, 39, and 41 have previously been canceled or are presently canceled, and no claims are added; as a result, claims 1, 4-10, 12-15, 18-23, 26-30, 32-34, 37-38, and 40 are now pending and subject to examination in this application.

§*102 Rejection of the Claims*

Claims 23 and 30 were rejected under 35 U.S.C. § 102(e) for anticipation by Hadad (U.S. Patent No. 6,985,432).

The Office Action stated that claims 25 and 31 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Applicant has amended claim 23 by incorporating all of the limitations of claims 24 and 25 into claim 23, and canceling claims 24 and 25. The Applicant respectfully submits that this places claim 23 into a condition for allowance, and respectfully requests a notice to that effect.

The Applicant has amended claim 30 by incorporating all of the limitations of claim 31 into claim 30, and canceling claim 31. The Applicant respectfully submits that this places claim 30 into a condition for allowance, and respectfully requests a notice to that effect.

§*103 Rejection of the Claims*

Claims 1, 4, 10, 34 and 37 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hadad (U.S. Patent No. 6,985,432) in view of Kleider et al. (U.S. Patent No. 6,487,252). The Applicant respectfully traverses the rejections of claims 1, 4, and 10.

Regarding claim 34, the Office Action stated that claim 36 was allowable. The Applicant has amended claim 34 to include all the limitations of claim 36. The Applicant respectfully submits that this places claims 34, 36, and 37 into a condition for allowance, and respectfully requests a notice to that effect.

Regarding claims 1, 4, and 10, the Office Action admits that the Hadad reference does not disclose estimating/obtaining a window length using an input pilot signal, forming a window using the window length for sampling the input pilot signal for estimating the frequency and

phase drifts, estimating the frequency and phase drifts between the transmitter and the receiver clocks using the window, computing a clock correction parameter based on the phase and frequency drifts, and synchronizing the receiver and transmitter clocks based on the clock correction parameter, as is recited in claims 1 and 10. However, the Office Action contends that the Kleider et al. reference discloses these features. The Applicant respectfully disagrees.

In Kleider et al., the "window" refers to the *input* to the FFT (*i.e.*, time domain samples), wherein the input samples to the FFT are modified using a sliding window in time. By contrast, the "window" in the Applicant's disclosure is a window of FFT *outputs* (pilot FFT points). Although reference is made to "frequency domain estimation processes" in Kleider et al., in the context of the Kleider et al. reference, this is essentially the same as the "sliding window in time domain" concept, except that is implemented in the frequency domain.

Additionally, in the Kleider et al. reference, the "window" concept refers to multi-resolution (short term and long term) drift estimation capability. This "window" is used for correlating a set of pilot time domain samples with a known reference pilot sequence at the receiver. Also, this window is a sliding window (overlapped samples across windows) in time. In Applicant's disclosure, the term window is used only to denote a set of pilot FFT points (i.e., FFT output at pilot bin), used by the frequency and phase estimators. This window is purely in the frequency domain. Moreover, this window is a block window, in the sense that a given pilot FFT point can be part of only one window, that is, each window consists of a unique set of successive (in time) pilot FFT points. Additionally, the Applicant's claimed subject matter does not have to have a notion of the exact transmitted pilot point, except to know the pilot frequency.

Claims 8-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hadad (U.S. Patent No. 6,985,432) in view of Kleider et al. (U.S. Patent No. 6,487,252) as applied to claim 1, and further in view of Sawahashi et al. (U.S. Patent No. 5,694,388). The Applicant respectfully traverses this rejection.

The Office Action admits that neither the Hadad reference nor the Kleider et al. reference discloses estimating a phase drift that includes estimating a reference phase, estimating the phase of an input pilot signal, and obtaining the phase drift by using the estimate of the phase of the

input pilot signal and the estimated reference phase. However, the Office Action contends that the Sawahashi et al. reference discloses these features. The Applicant respectfully disagrees.

The Sawahashi et al. reference relates to obtaining pilot phase error estimates by comparing a reference pilot symbol of a known pattern that is supplied from a pilot signal generator. The claimed subject matter uses a received pilot signal to estimate a reference phase. This estimated reference phase has nothing to do with the transmitted phase, and it is purely arbitrary. In the claimed subject matter, there is no pilot signal generator to generate the reference phase. There is furthermore no need to know the exact transmitted pilot phase at the receiver in order to estimate this reference phase and to estimate the pilot phase error.

For the foregoing reasons, the Applicant respectfully submits that the Office Action has failed to establish a *prima facie* case of obviousness, and respectfully requests the withdrawal of the rejection of claims 8-9.

Claim 13 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hadad (U.S. Patent No. 6,985,432) in view of Kleider et al. (U.S. Patent No. 6,487,252) as applied to claim 10, and further in view of Sawahashi et al. (U.S. Patent No. 5,694,388). The Applicant respectfully traverses this rejection.

The Applicant respectfully submits that it has shown above that claim 10, upon which claim 13 depends, is in a condition for allowance, and respectfully requests the withdrawal of the rejection of claim 13.

Claim 24 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hadad (U.S. Patent No. 6,985,432) in view of Heidari et al. (U.S. Patent No. 7,035,326).

The Office Action stated that claim 25 was allowable. The Applicant has amended claim 23 by incorporating the limitations of claims 24 and 25 into claim 23. The Applicant respectfully submits that this obviates the rejection of claim 24.

Claim 38 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hadad (U.S. Patent No. 6,985,432) in view of Heidari et al. (U.S. Patent No. 7,035,326).

The Office Action stated that claim 39 would be allowable if re-written in independent form including all of the limitations of the base claim and any intervening claim. The Applicant has incorporated all the limitations of claim 39 into claim 38, and canceled claim 38. The Applicant respectfully submits that claim 38 is now in a condition for allowance, and respectfully requests the withdrawal of the rejection of claim 38.

Allowable Subject Matter

Claims 15, 18-22 were allowed.

Claims 5-7, 12, 14, 25-29, 31-33, 36, and 39-40 were objected to as being dependent upon a rejected base claim, but were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reservation of Rights

In the interest of clarity and brevity, Applicant may not have equally addressed every assertion made in the Office Action, however, this does not constitute any admission or acquiescence. Applicant reserves all rights not exercised in connection with this response, such as the right to challenge or rebut any tacit or explicit characterization of any reference or of any of the present claims, the right to challenge or rebut any asserted factual or legal basis of any of the rejections, the right to swear behind any cited reference such as provided under 37 C.F.R. § 1.131 or otherwise, or the right to assert co-ownership of any cited reference. Applicant does not admit that any of the cited references or any other references of record are relevant to the present claims, or that they constitute prior art. To the extent that any rejection or assertion is based upon the Examiner's personal knowledge, rather than any objective evidence of record as manifested by a cited prior art reference, Applicant timely objects to such reliance on Official Notice, and reserves all rights to request that the Examiner provide a reference or affidavit in support of such assertion, as required by MPEP § 2144.03. Applicant reserves all rights to pursue any cancelled claims in a subsequent patent application claiming the benefit of priority of the present patent application, and to request rejoinder of any withdrawn claim, as required by MPEP § 821.04.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 371-2140 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this _10_ day of March 2008.

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